

SpollIJ MLLKRRIGLLLSMVGVFMLLAG**CSSVKEPI**TADSPHFWDKYVYVPLSELITYVAKLTGDN----- **63**
YqjG ML-KTYQKLLAM---GIFLI**VLCSGNAAFA**ATNQVGGLSNVGFFHDYLIIEPFSALLKGVAGLFHGE **65**

I
SpollIJ YGLS**I**ILV**T**IL**I**RL**L**L**L**PL**M**IKQLRSS---KAMQALQPEMQKLKEKYSS-KDQKTQQKLQQETMA **121**
YqjG YGLS**I**ILV**T**IL**I**RV**L**VL**PL**FVNQFKKQRI**FQ**EKMAV**IK**PQVDSIQVKLKKTK**DP**EKQKELQMEMMK **128**
YidC WGF**S**I**I**II**T**F**I**VRGIMY**PL**T**KA**QY**TS**M---AKMRMLQPKIQAMRERL--GDD--KQRISQEMMA **410**
Oxa1p WWGT**IA**AT**IL**I**R**CLMF**PL**YVKSSDTV---ARNSHIKPELDALNNKLMST**DL**Q**Q**GGQLVAMQRKK **189**

II
SpollIJ LFQKHGVNP--LAG-CFPIL**I**QMPILIGFY**HA**IMRTQAISEH--SFLWFD**L**GEK**D**PYYILP--IVA **182**
YqjG LYQEHNNP--LAMGCLPML**I**QSPIMIGLY**YA**IRSTPEIA**SH**--SFLWFS**L**GQ**S**D**I**I**MS**L**S**AGIMY **190**
YidC LYKAEKVNP--LGG-CFPLL**I**QMPIFLALY**Y**MLMGSVELRQAPFALWIHD**L**SAQ**D**PYYILP--ILM **473**
Oxa1p LLSSHG**IK**NR**W**LAAPMLQ**IP**I**AL**GFFNAL**R**HMANYPVDGFANQGVAWFTD**L**TQ**AD**PYLG**L**QVITAA **255**

IV
SpollIJ GVA**T**FVQ**Q**KLMMAGNAQQNP---QMAM**L**WIM**P**IMI**I**VF**A**IN**F**PAAL**S**LYWVVGNLFM**IA**Q**T**FL **241**
YqjG FVQAY**I**AQKL**S**AKYSAVPQNPA**AA**Q**S**AK**L**LMVF**I**F**V**MM**T**IFSLN**V**PAAL**P**LYWFTSGLFLTV**Q**NI**V** **256**
YidC GVTMFF**I**QKMSPT--TVTDP---MQQK**I**MTFM**P**VI**F**TVFFLW**E**PSGLVLYYIVSNLVT**II**Q**Q**QL **532**
Oxa1p VFIS**F**TRLGGETGAQ**Q**QFSSP-----MKRL**F**TL**P**II**S**IPATMNL**S**SAVVLYFAFN**G**AFSVL**Q**TMI **315**

SpollIJ IKGPDIKKNPEPQKAGGKKK **261**
YqjG LQMT**H**HKSKKTAALTESV-K **275**

FIG._1A

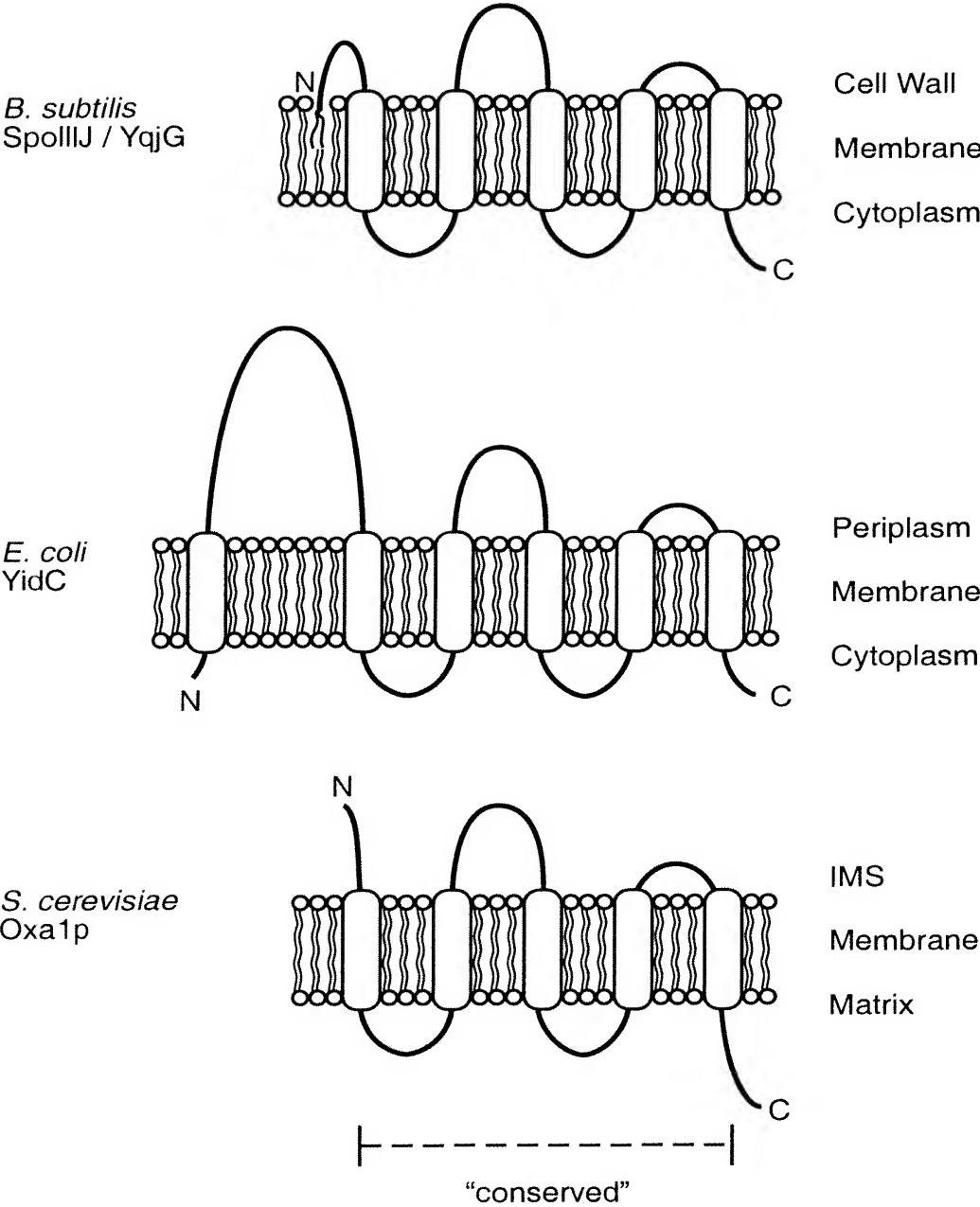
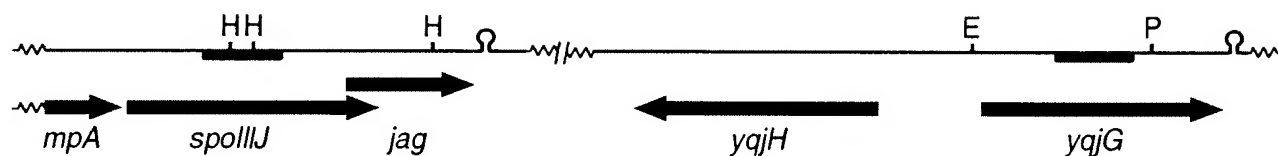
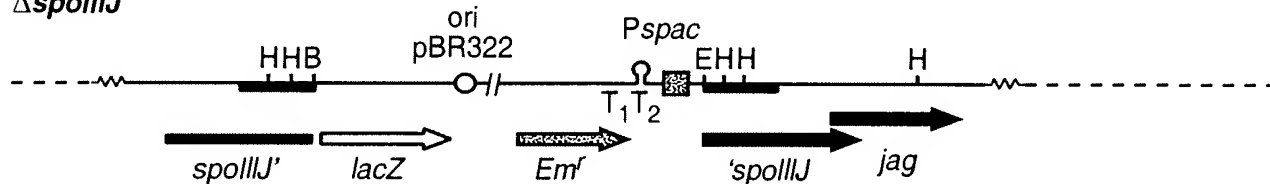


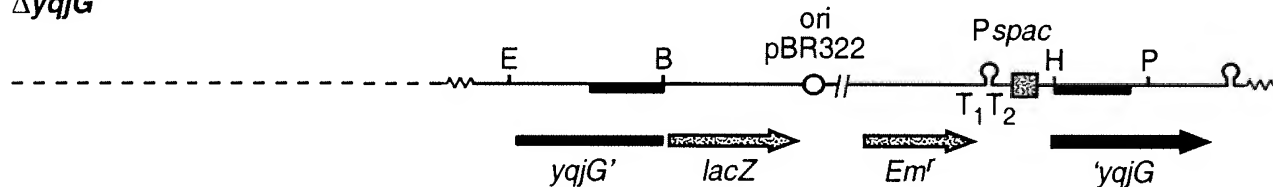
FIG._1B

***B. subtilis* 168**

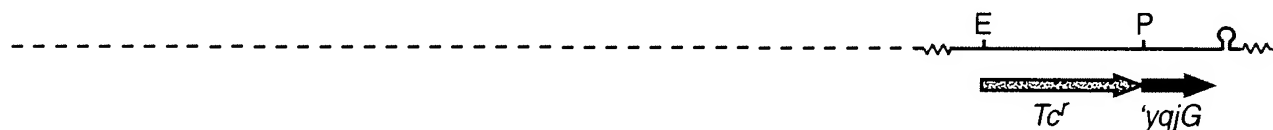
↓ Sco integration of pMutin- Δ *spoIIJ*

B. subtilis* Δ *spoIIJ

Sco integration of pMutin- Δ *yqjG* ↓

B. subtilis* Δ *yqjG

Dco replacement of *EcoRI*-*PstI* fragment by a *Tc^r* marker ↓

B. subtilis* Δ *yqjG*-*Tc

↓ Sco integration of pMutin-*IspoIIJ*

Dco replacement of *EcoRI*-*PstI* fragment by a *Tc^r* marker ↓

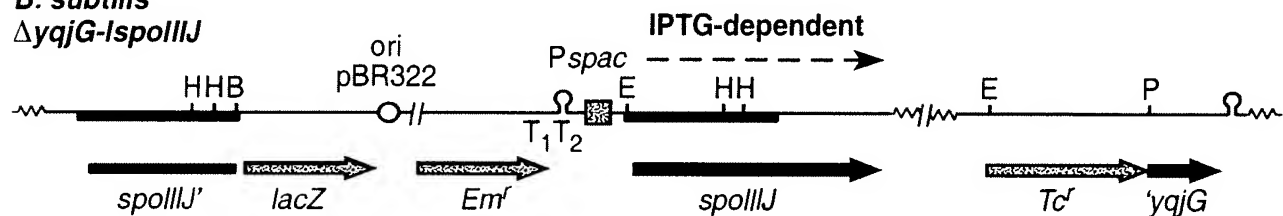
B. subtilis* Δ *yqjG*-*IspoIIJ**FIG. 2**

FIG._3A

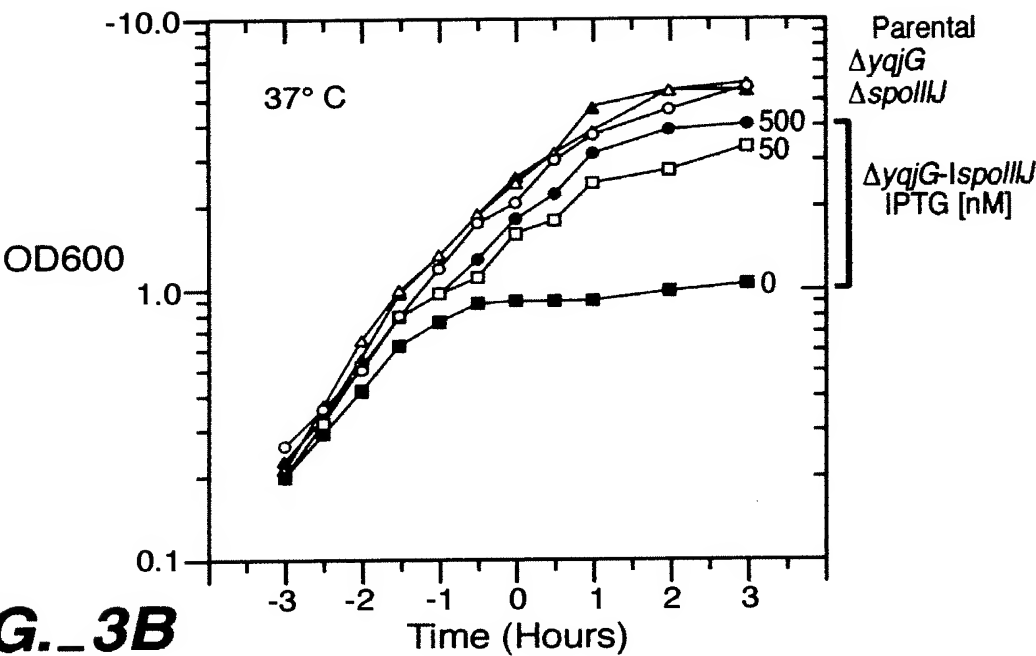
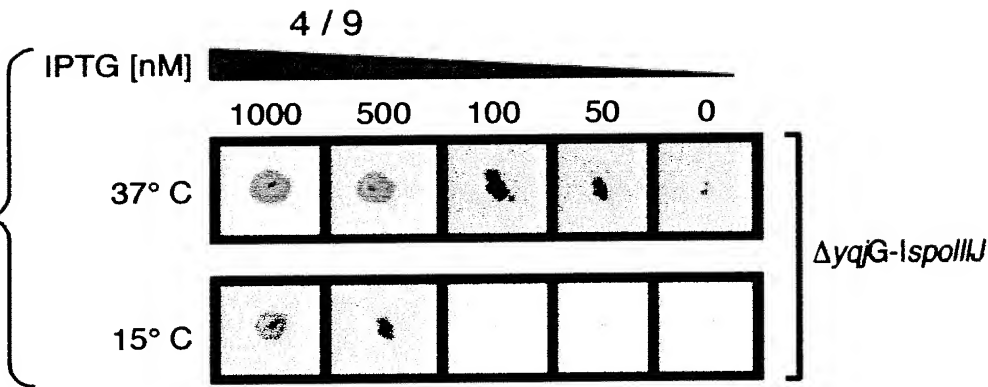


FIG._3B

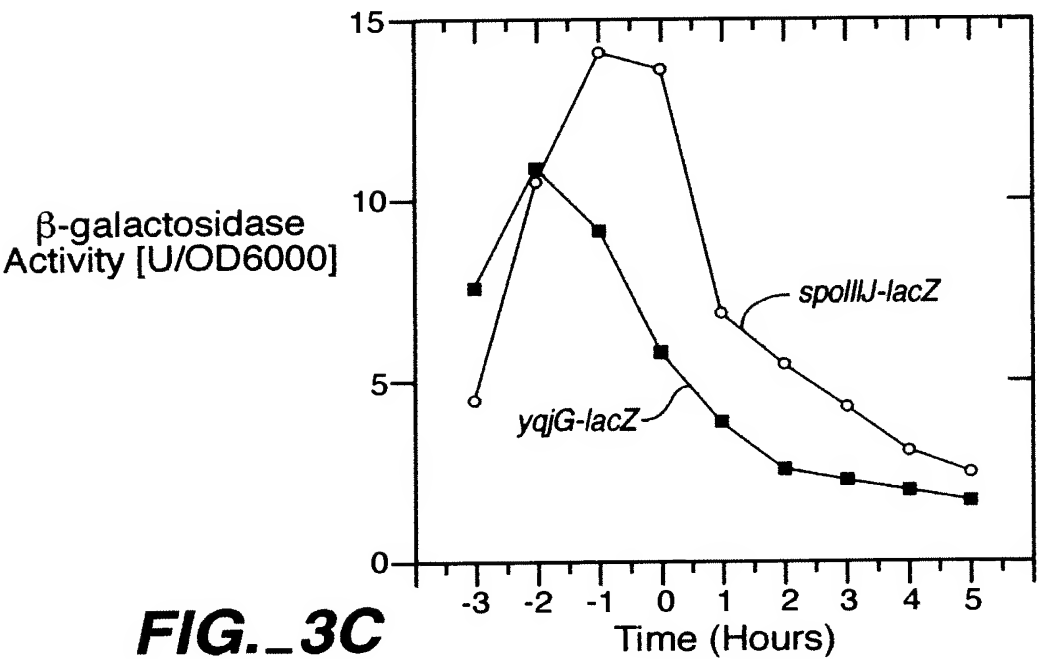
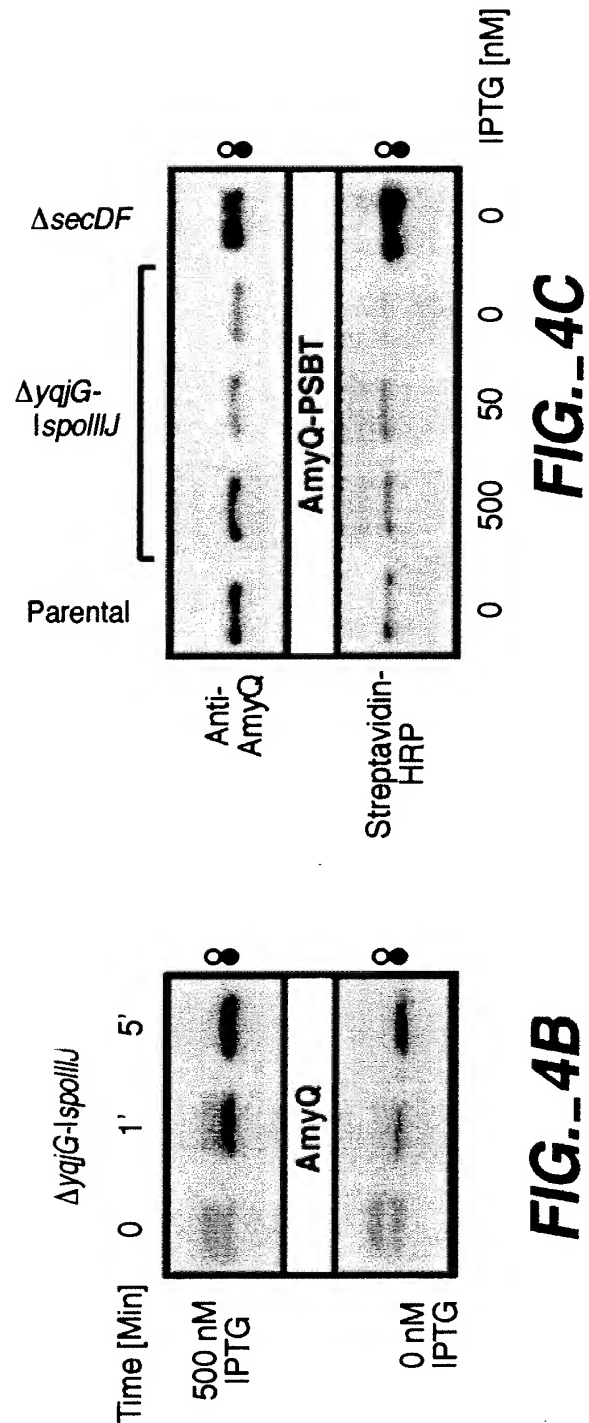
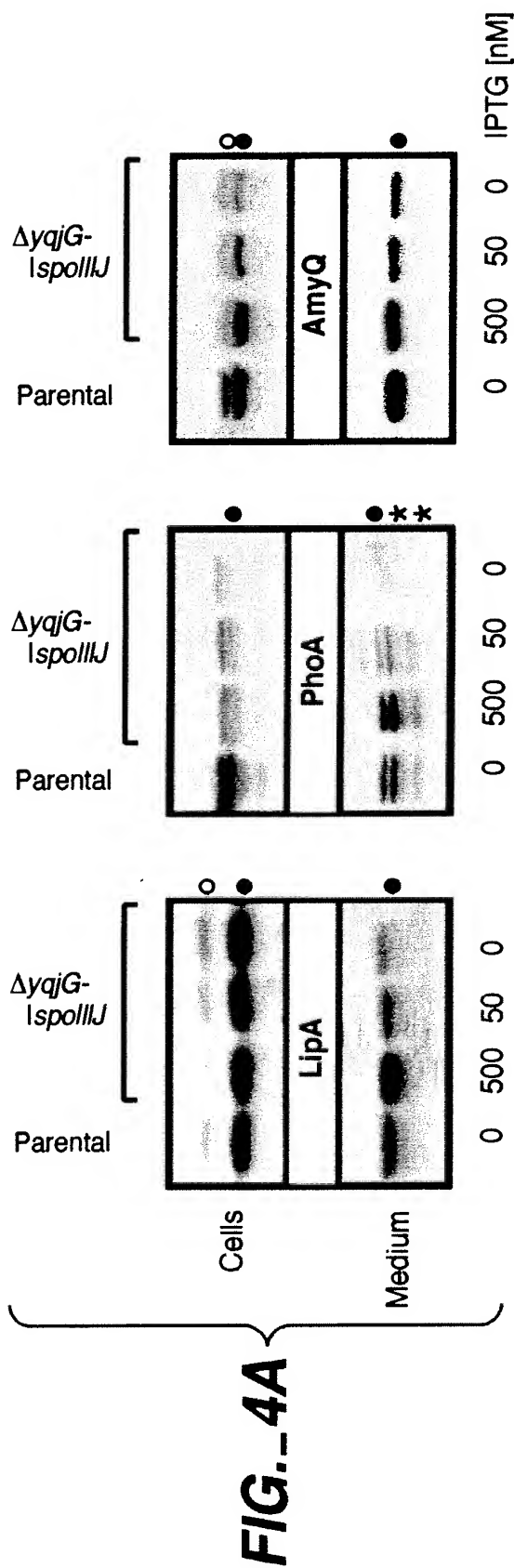
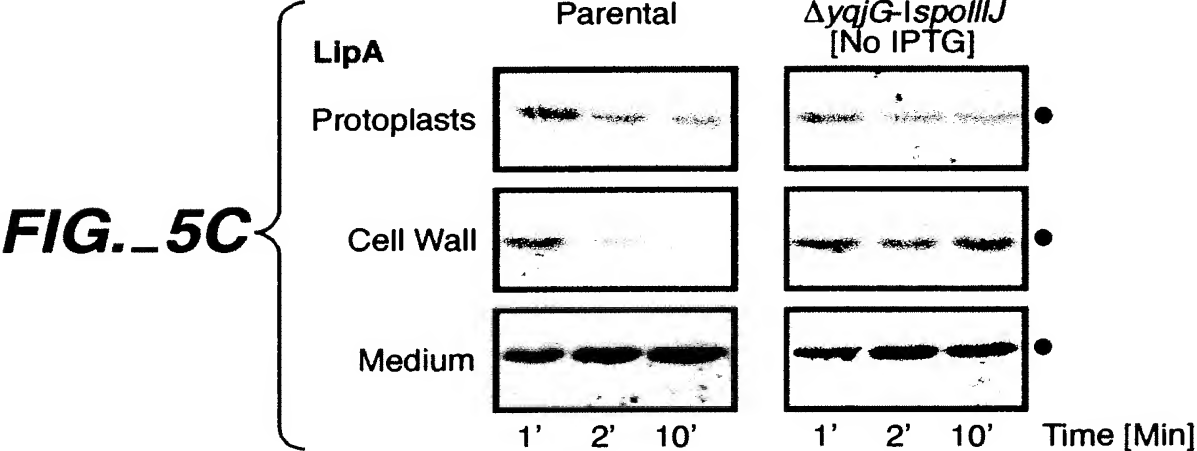
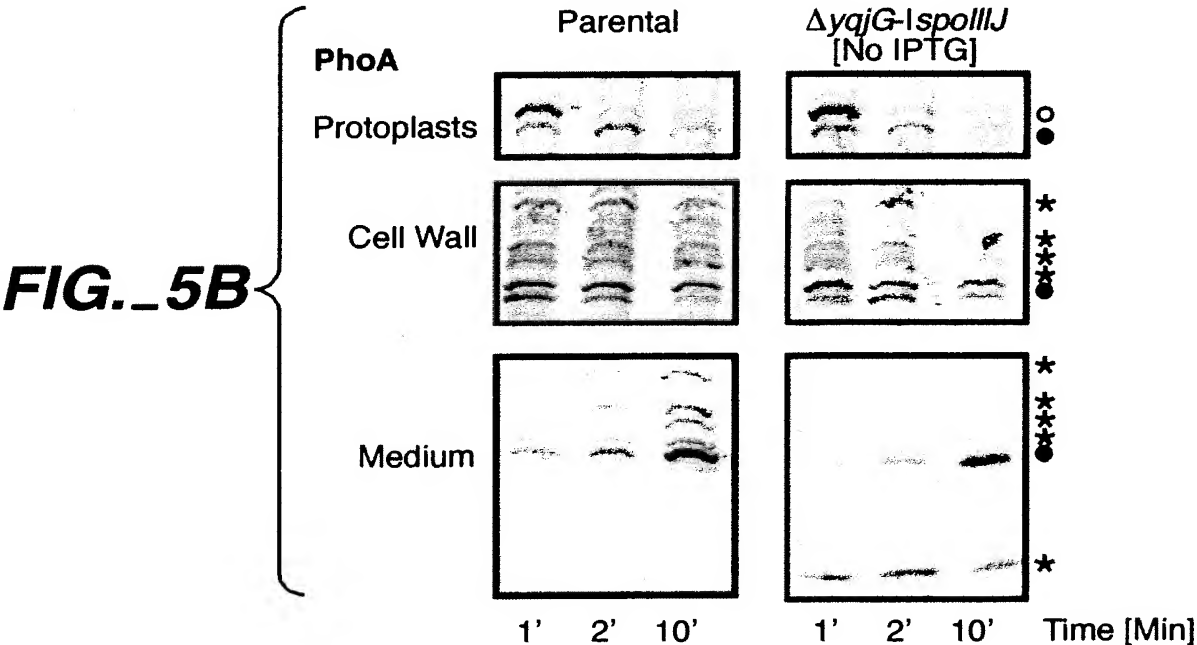
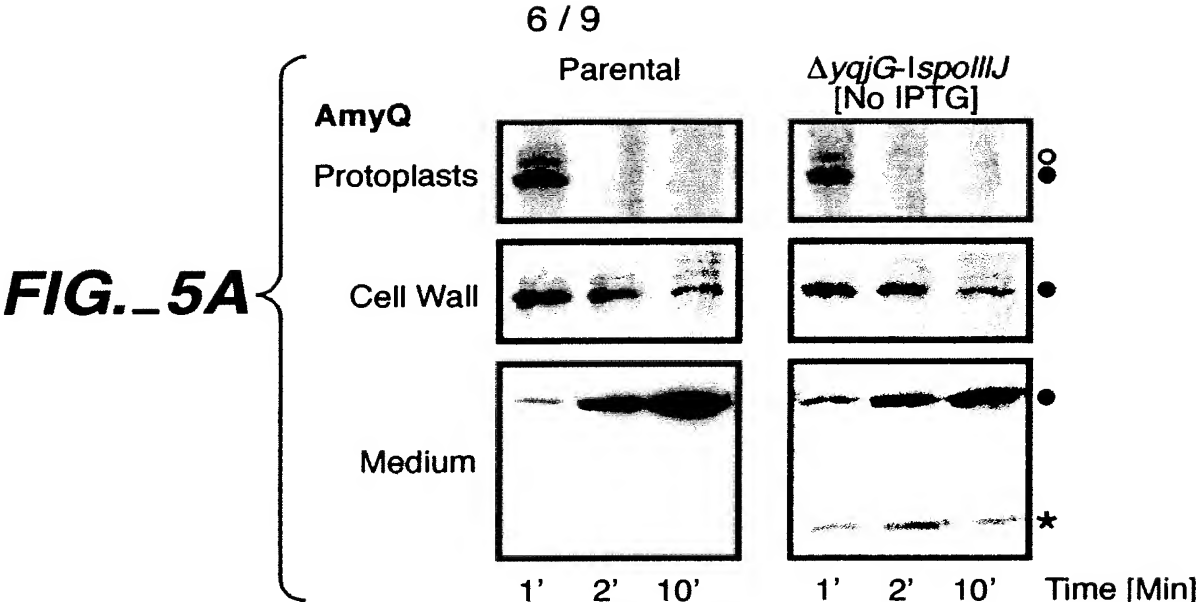
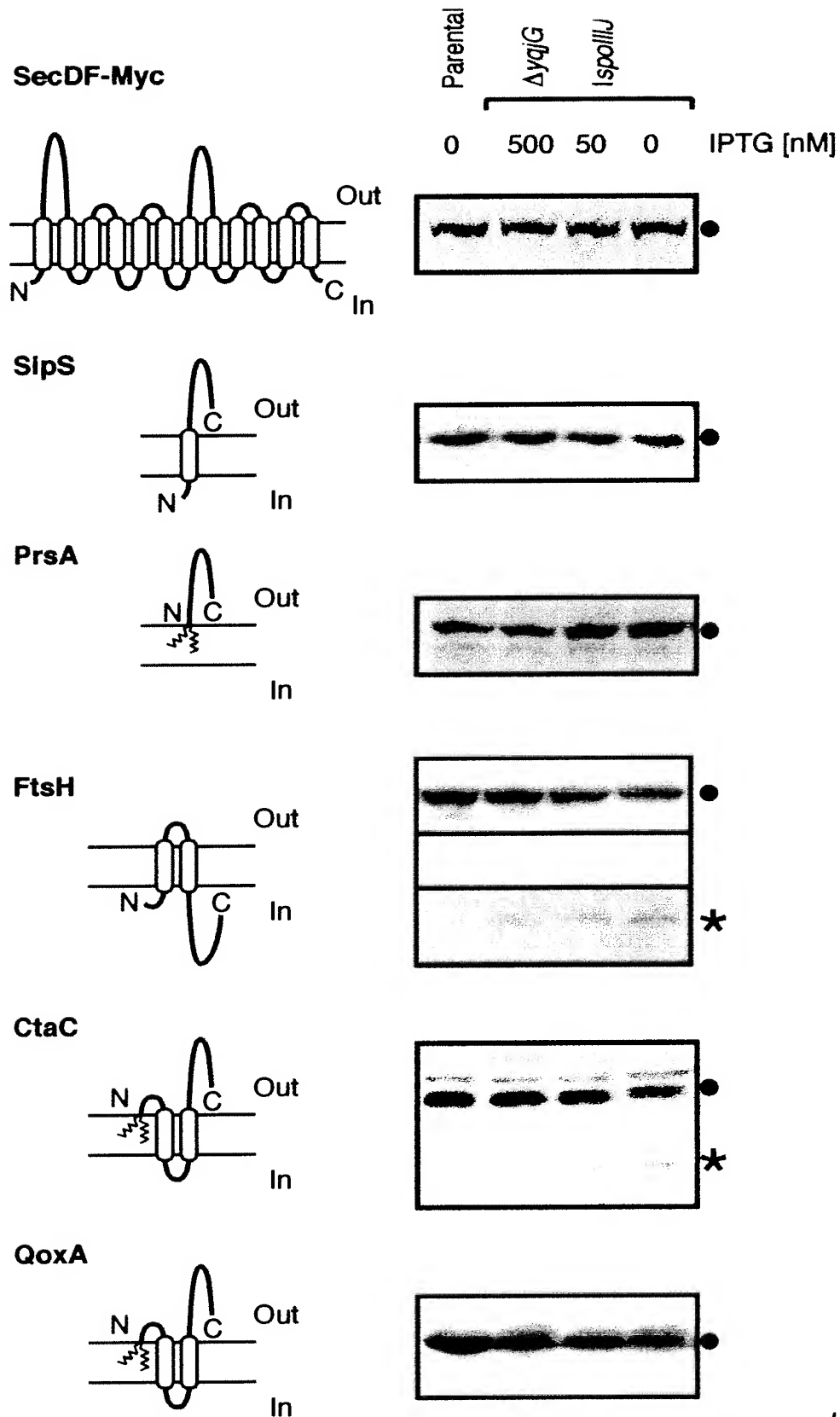


FIG._3C





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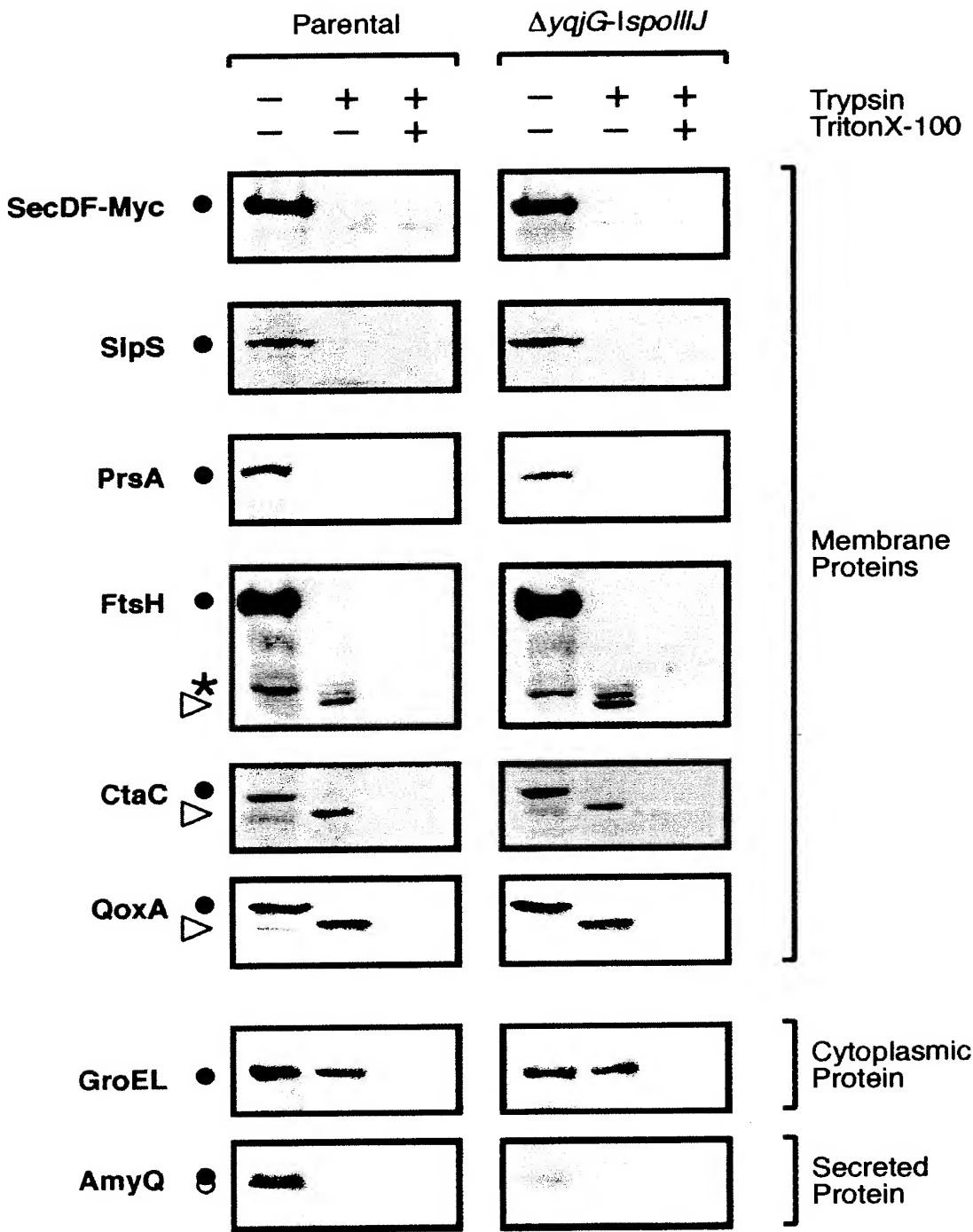
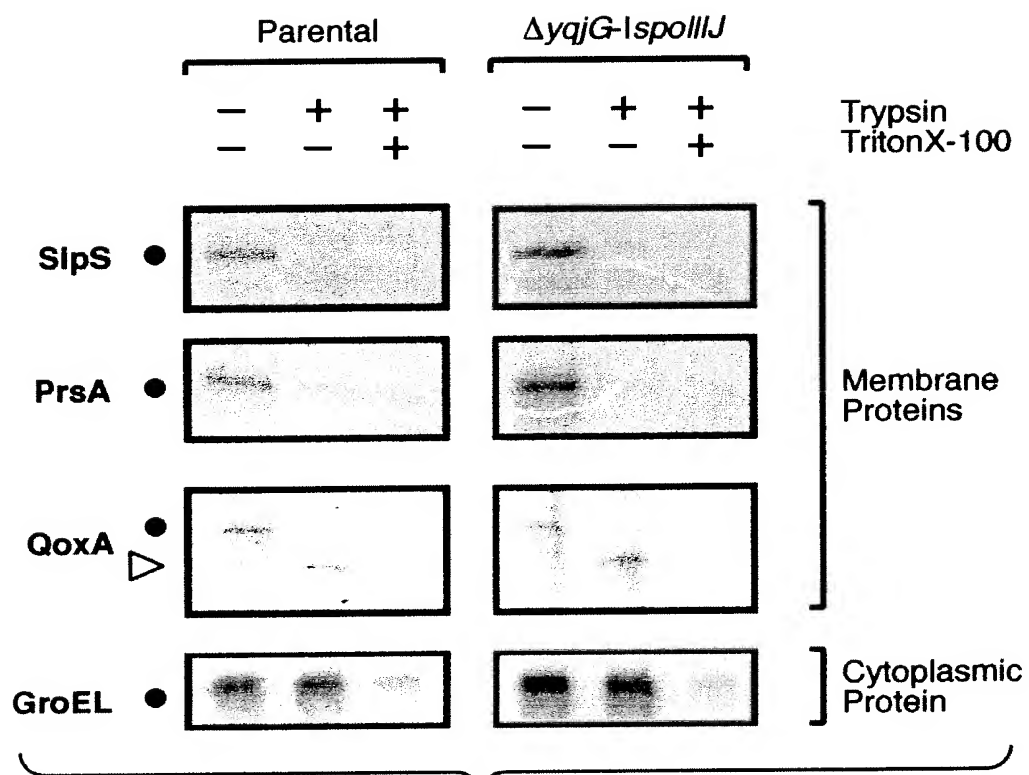


FIG. 7

**FIG._8**